



Set-top Box (STB)

Framing the Discussion About Utility Program Design

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October 7, 2010
ENERGY STAR Partner Meeting

Agenda



- Efficiency programs update
- Market update
- Opportunities, challenges, and next steps

US STB Efficiency Work to Date



- **ENERGY STAR**

- First STB specification became effective in 2001
- Several partnerships in effect
 - 5 Service Providers
 - 10 STB Manufacturers

- **Energy Efficiency Programs**

- Programs in Market : New Jersey
- Many others investigating including BC Hydro
- Consortium for Energy Efficiency (CEE)
 - STBs are a focus product area for CEE as efficiency programs share insights and research, connect with industry, explore program approaches, participate in ENERGY STAR specification processes, etc.

ENERGY STAR V3.0 Update



- Updated TEC allowances
- 1.5X purchase requirement multiplier that rewards thin clients and deep sleep
- TEC equation that rewards deep sleep
- Pro-rated purchase requirement

ENERGY STAR V3.0 Timeline



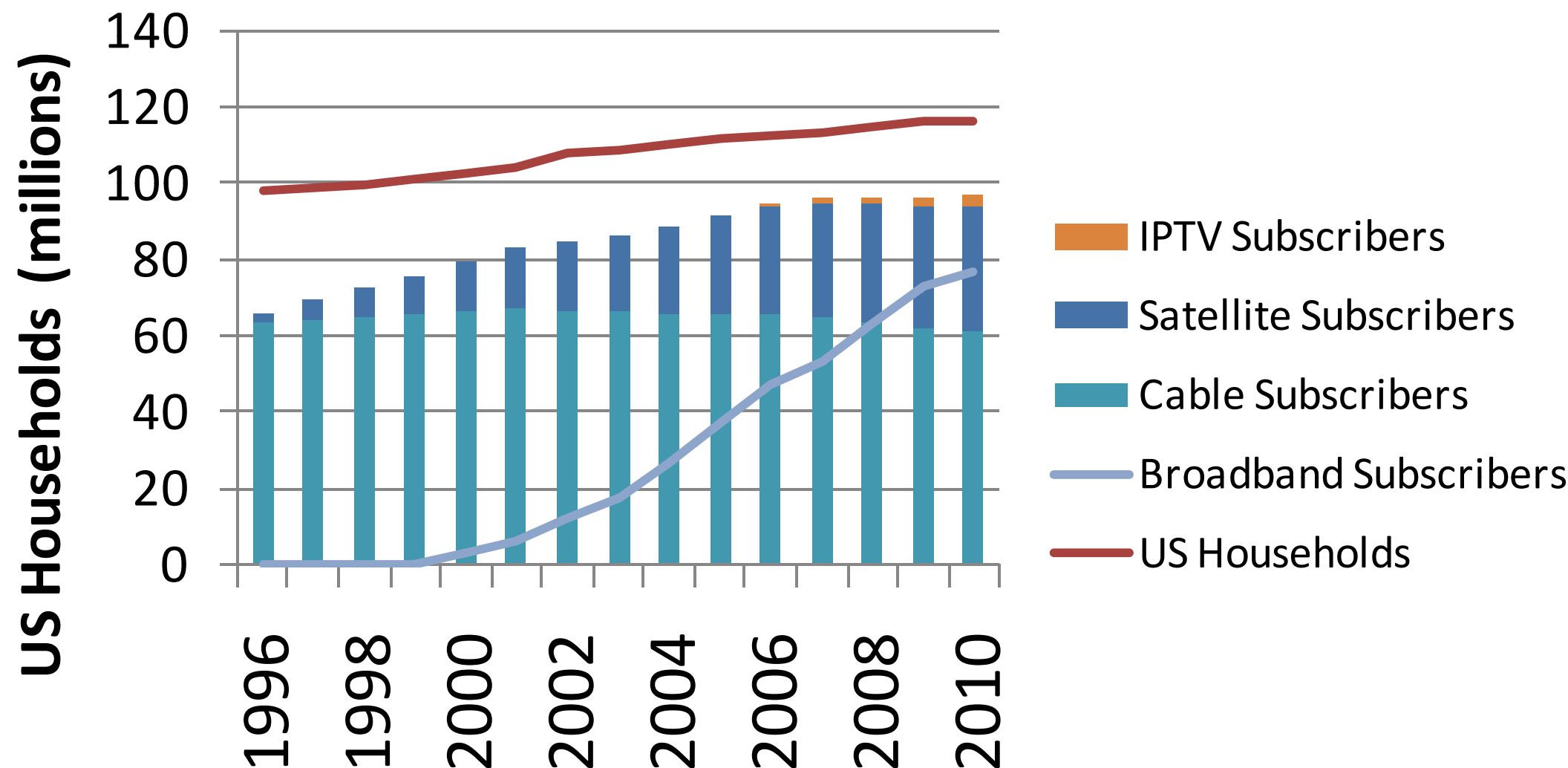
- EPA plans to finalize V3.0 by Dec, 2010
- Effective date will be no earlier than Sep, 2011
- Comments are due Oct 22, 2010

Key International Developments



- Canada is engaging stakeholders in the development of a STB regulation
 - Will consider voluntary agreement as well
- EU Voluntary Agreement is pending final approval

Pay TV and Broadband Penetration



Source: NCTA, SBCA, Pew Research

Top US TV Service Providers



Segment	Service Provider	Subscribers
Cable	Comcast	23.4M
	Time Warner	12.8M
	Cox	5.1M
	Charter	4.8M
	Cable Vision	3.1M
Satellite	DirecTV	18.7M
	Dish Network	14.3M
Telco	Verizon FIOS	3.2M
	AT&T U-verse	2.3M

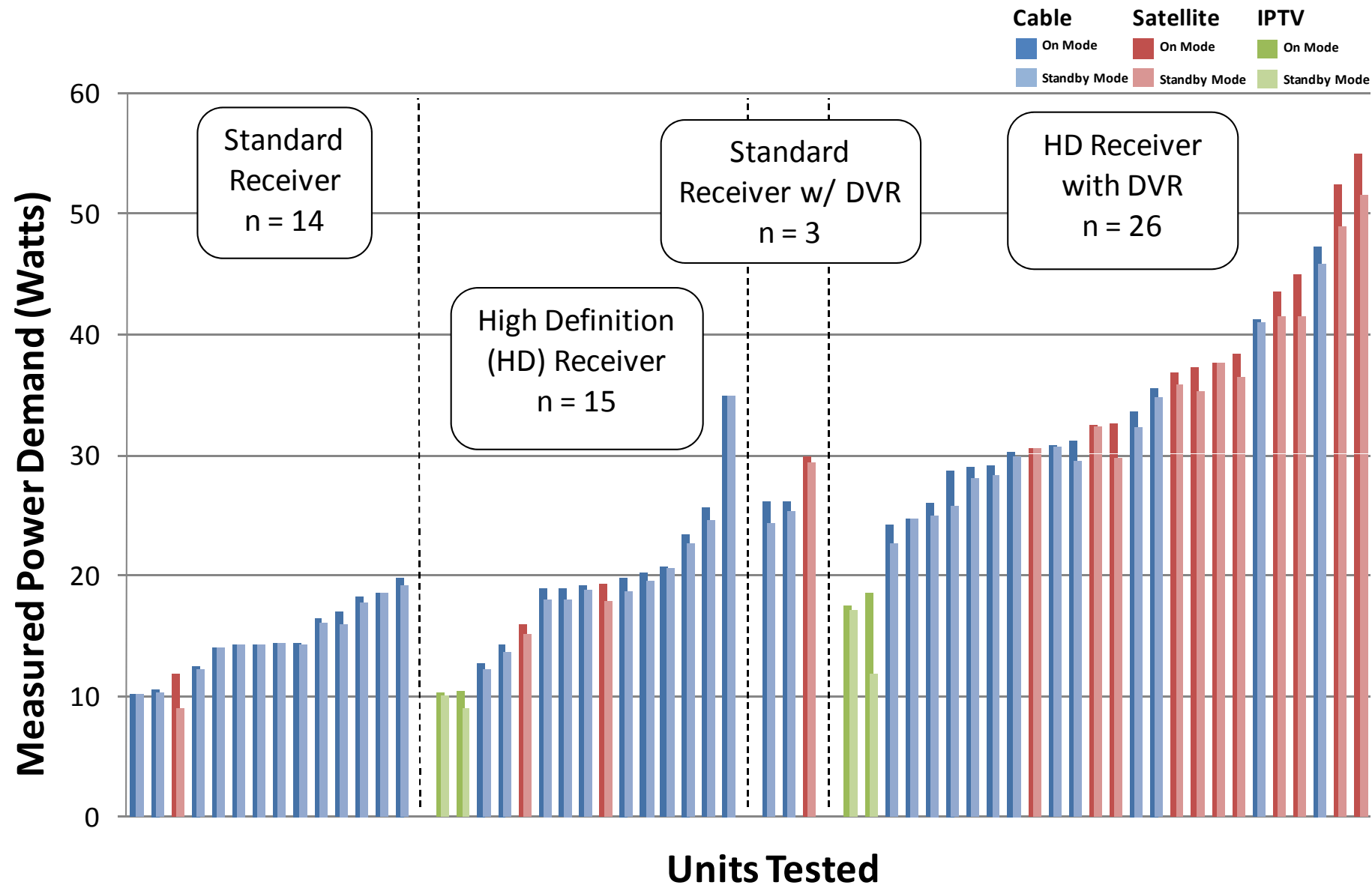


Source: NCTA, SBCA, Bloomberg, and other public data.

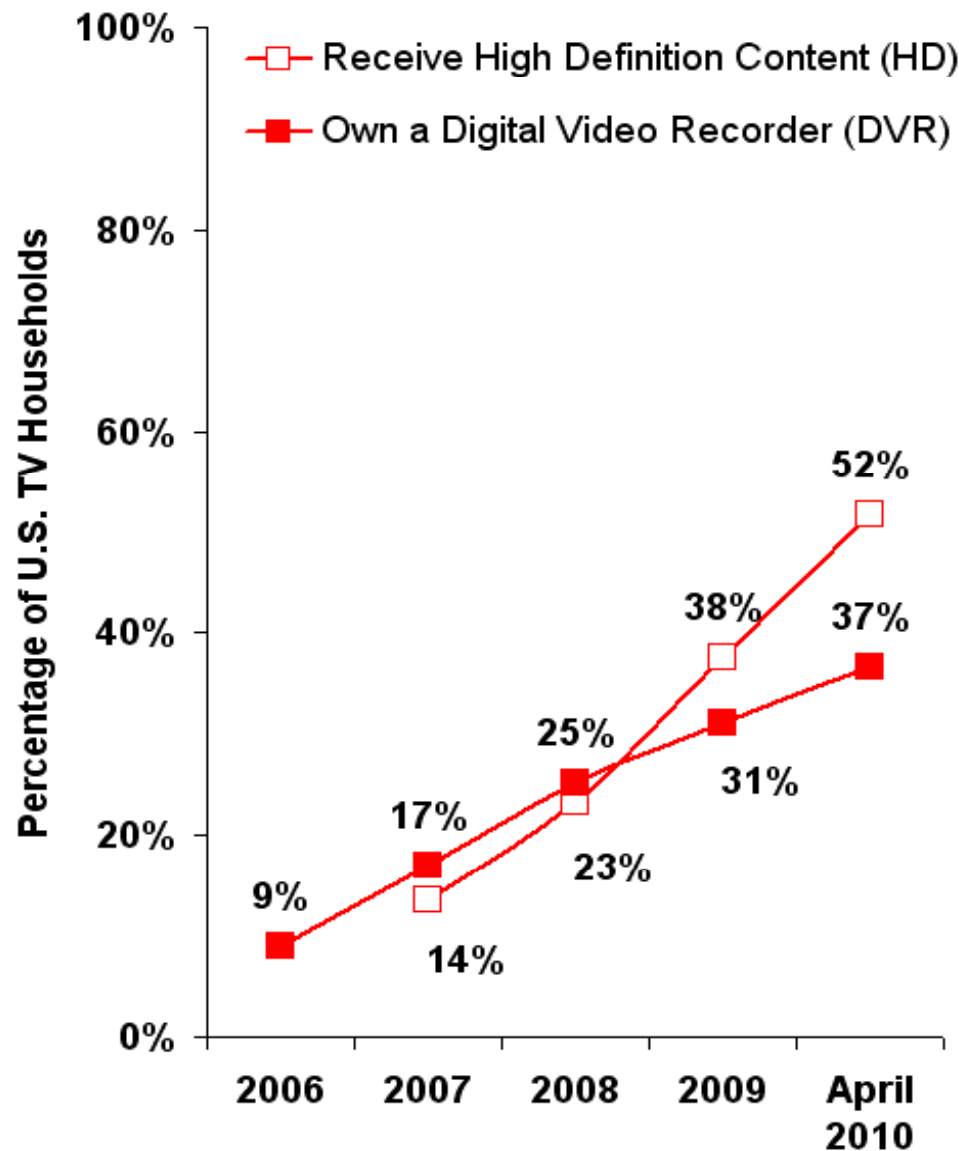
NRDC 2010 Prelim Test Results



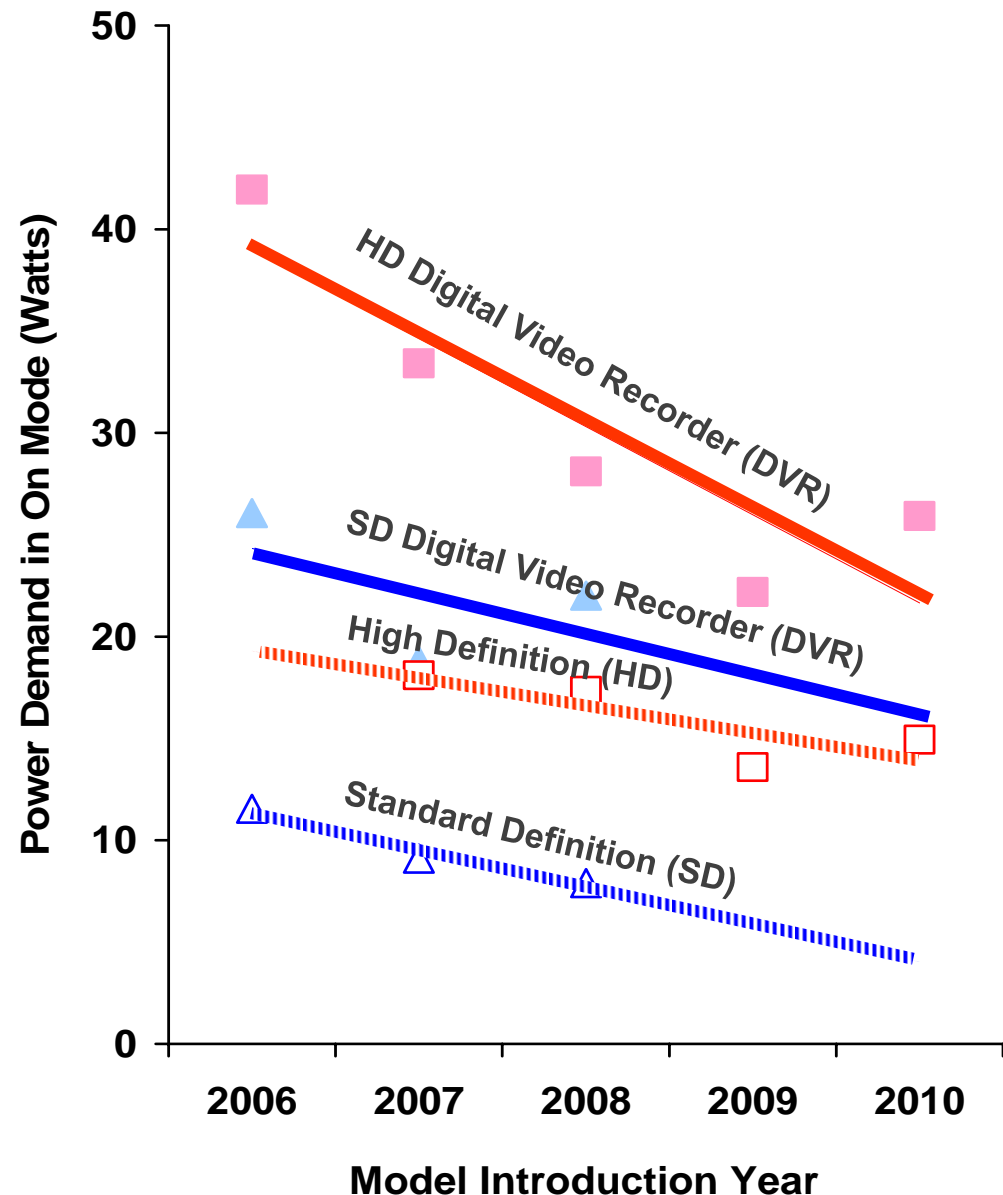
NRDC'S 2010 SURVEY OF ENERGY CONSUMED BY SET-TOP BOXES



On Mode Power Reductions Since 2006



Source: Nielsen

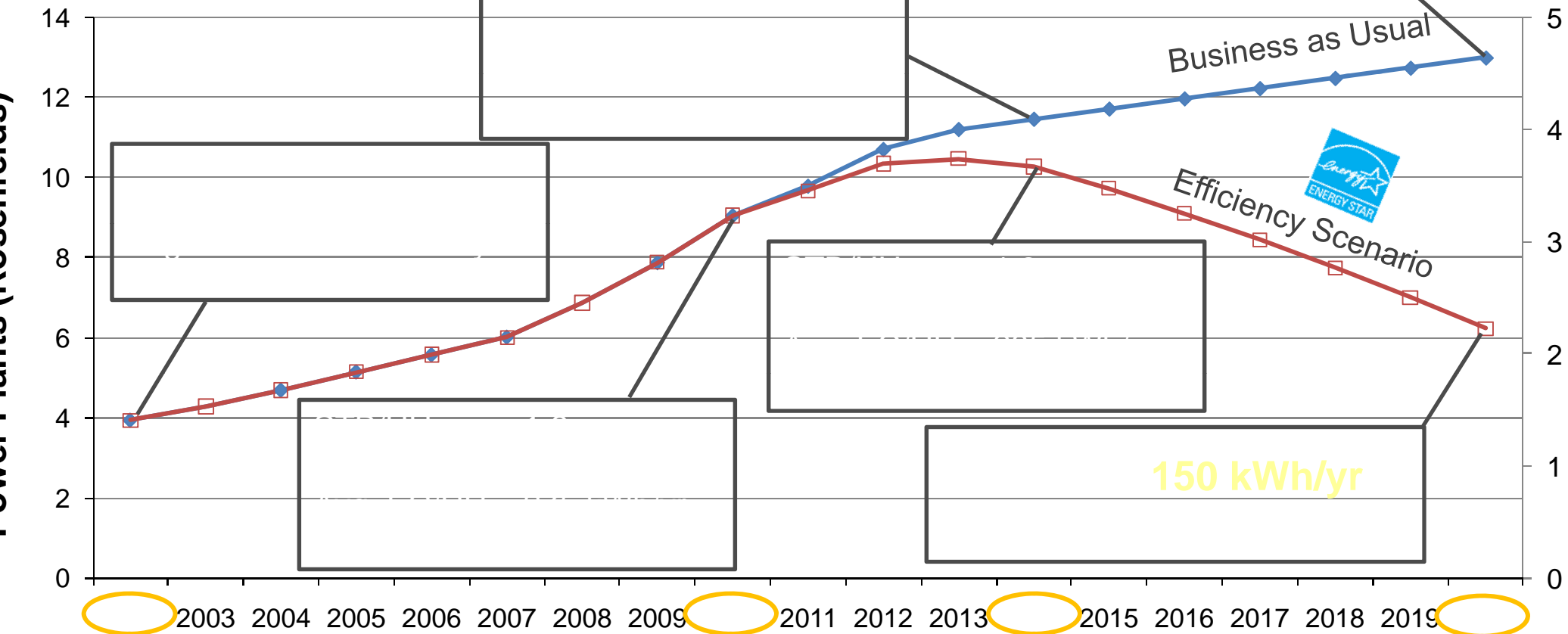


Source: Preliminary Results of 2010 NRDC Study

Efficiency Scenario



US Pay TV STB Total Energy Consumption Scenarios



Business as Usual maps preliminary projections from NRDC 2010 forward. The Efficiency Scenario plots ENERGY STAR V3.0 adoption from 25% in 2011 to 100% in 2014 followed by a linear reduction in Energy Consumption per Subscription Household (EC/HH) to 150 kWh/yr in 2020. UEC = Unit Energy Consumption.

Today's cable multi-room is better than multi-DVR but won't get us to 150 kWh/yr

Example Cable Multi-room Configuration for 3 TV Home

	On			Sleep			Deep Sleep			TEC
	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	kWh/yr
HD-DVR	29	9	95	28	15	153				249
HD-Client	20	3	22	19	21	146				168
HD-Client	20	3	22	19	21	146				168
Total			139			445				584



Today's IPTV is relatively efficient

AT&T U-verse 3 TV Multi-room



	On			Sleep			Deep Sleep			TEC
	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	kWh/yr
HD-DVR	19	9	61	12	15	65				126
HD-Client	10	3	11	9	21	69				80
HD-Client	10	3	11	9	21	69				80
Total			84			203				287

Dutch Tele2, 3 TV Multi-room

	On			Sleep			Deep Sleep			TEC
	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	kWh/yr
HD-DVR	10	9	31	9	15	47				78
HD-Client	8	3	9	7	21	54				62
HD-Client	8	3	9	7	21	54				62
Total			49			154				203

Other savings opportunities

Low power thin clients

	On			Sleep			Deep Sleep			TEC
	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	kWh/yr
HD-DVR	23	9	76	23	15	126				202
HD-Client	6	3	7	3	21	23				30
HD-Client	6	3	7	3	21	23				30
Total			89			172				261

DVR deep sleep and TVs as clients

	On			Sleep			Deep Sleep			TEC
	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	Watts	Hours	kWh/yr	kWh/yr
HD-DVR	23	9	76	14	7	35	1	8	3	114
TV as client										
TV as client										
Total			76			35			3	114

Sky Broadcasting Best in Class Worldwide



- Power levels
 - 22.5W On
 - 13.2W Sleep
 - 0.65W Deep Sleep
- Auto power down at 11pm to 0.65W
 - Wakes automatically to record programs
 - Wakes every ½ hour to check for new program recording requests entered by subscribers using smart phones
 - 90 second wake time when user hits power button
- Sky installers program Sky remote to control both TV and STB



\$99 Apple TV

- Estimated power level of 3W



Service Provider Strengths Relative to Incentive Programs



1. Marketing power
2. Ability to track device inventory, configuration and possibly power states
3. Access to homes



Invitation to collaborate



US Pay TV STB Total Energy Consumption Scenarios





Contact Information



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